A Positive Prognosis: Lower Energy Consumption and a More Even Indoor Environment at Parexel's Nottingham Facility

Client Summary:

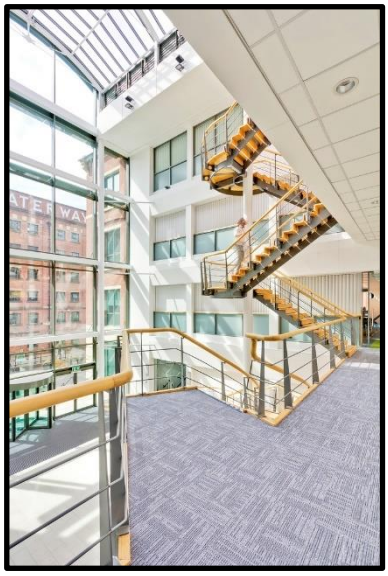
Customer: parexel®

Building: Parexel House
Installation year: 2018
Building Framework: Brick/Sandstone
Type of Building: Commercial Offices
Size: 5,611 m²

Overview:

Parexel is a leading provider of solutions to accelerate the development and delivery of innovative new therapies to improve world health, from Clinical through to Commercialization. Supporting life science companies across the globe. Parexel is one of the largest clinical research organisations in the world and has helped develop approximately 85% of the 200 top-selling biopharmaceuticals on the market today. Parexel is headquartered near Boston, Massachusetts and in Durham North Carolina with nearly 20,000 employees and supports clients in more than 100 countries. Parexel's Nottingham location was established in 2015.

The Assignment / Solution:



The client has a long-standing history of being at the forefront of biopharmaceutical services as well as renowned for recognising their environmental responsibilities. Parexel facilities harbour energy saving and carbon reducing initiatives in order to keep their carbon footprint enviably low. As part of their continued journey, Richard Cotterill (Parexel Senior FM), researched new and innovative technologies that would support Parexel's global sustainability targets and chose to integrate Ecopilot at their Nottingham facility, an already energy efficient building. The **1st quarter** included a period when unusually hot weather should have resulted in increased cooling costs, however the site benefitted from an **electricity saving of 30 MWh's**, as well as having a significant impact on base load gas consumption. The 2nd,3rd and 4th quarters continued to exceed the guaranteed minimum savings for both gas and electricity consumption. The introduction of Ecopilot has also seen a significant reduction of climate complaints from occupants. All has been achieved through Ecopilot automatically, pro-actively and dynamically optimising the HVAC in real time, in accordance with the needs of the building and its users, whilst assisting the PAREXEL facilities team and their designated M&E and BMS contractors to improve the HVAC operation on site.

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ecopilot®
Innovative . Intelligent . Intuitive

Ecopilot's initial assessment guaranteed an ROI of 2 years or less...

The results confirmed that the payback on Parexel's investment was only 9 months!

Results:

As part of the verification process, Parexel used independently sourced data to validate the results presented to them. These confirmed the expected savings Ecopilot promised to deliver had been exceeded. The measured and verified results confirmed savings of:

- **15.1% on total building electricity**
- **45.4% on gas consumption**
- **1,260 MWh's in 12 months**
- **264.64 tonnes of CO2**

That's equal to the carbon dioxide sequestered by 311 acres of forest in one year, or 4,376 seedlings grown over a 10-year period!

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M&E Contractor's Perspective:

"Though as the M&E contractor for Parexel, we don't directly benefit from the automatic energy savings that Ecopilot delivers, I've found the main benefit from an M&E's contractor's perspective is utilising the system insights to investigate and target anomalous HVAC behaviours. I've worked closely with the Ecopilot UK team to remotely identify areas of enhancement in the Nottingham facility. This has enabled us to focus the attention of contractors to specific tasks therefore avoiding unnecessary costs to Parexel associated with making physical investigations. The analytics produced by Ecopilot on systems that are fully optimised have been especially helpful in this regard."

Martin Eastwood
Managing Director Belmar Services.

Client's Perspective:

"Having explored most of the conventional carbon reduction techniques across the portfolio, we knew the next initiative was going to need to be something quite special to make an impact! Ecopilot answered that call and enabled us to leverage our existing BMS to deliver quite staggering results. Our primary objective was to lower our carbon footprint in line with our Environmental Charter and by exploiting the properties characteristics through thermal inertia we achieved not only this but a number of other in-direct objectives. The in-built analytics has significantly influenced our life cycle management practices, energy profiles and surfaced opportunities that have yielded quantifiable cost avoidance adjustments. In essence, this application represented a paradigm shift; away from the typical reactive programmes to a proactive, forward thinking solution!"

Richard Cotterill MBA
Parexel Senior Facilities Manager

"With sustainability being at the heart of our corporate culture and identity, energy conservation is central in our operation and processes. In Ecopilot, we have identified a solution that enhances the intelligence and expands the capabilities of our Building Management System. Ecopilot has also enabled us to make the roadmap clearer as we reflect on current practices and look to exercise the principles of the Coalition for Environmentally Responsible Economies (CERES). In-line with our pursuit for continuous improvement, the evaluation of our international portfolio is now underway, as Ecopilot becomes part of our global strategy."

John Johnson
Parexel Director of Facilities UK & Ireland

1st Year Summary of Economic & Environmental Savings

Gas Actual Readings/Reconcilliation Readings
Boilers off from July 18, new boilers commissioned 24th September 2018
Amount saved from new boilers. This figure has been 'added' into totals, as is not an Ecopilot saving

Gas Consumption

Reference Year (Utility Data)						Ecopilot Year			
	kWh's	£		kWh's	£		EP Dashboard (kWh's)	Eutility Data (kWh's)	£
			Jul-17	55,369	£1,105.51	Jul-18	16,144	17,469	£760.30
			Aug-17	411,962	£6,479.62	Aug-18	14,870	91,674	£2,309.63
Sep-16	42,776	£959.32				Sep-18	44,049	95,071	£2,367.79
Oct-16	121,801	£2,106.60				Oct-18	95,354	118,706	£2,874.01
Nov-16	103,618	£1,823.83				Nov-18	148,851	- 1,146	£358.88
Dec-16	95,903	£1,716.29				Dec-18	183,149	168,456	£3,912.74
Jan-17	126,175	£2,172.52				Jan-19	187,098	187,522	£4,310.83
Feb-17	101,396	£1,772.86				Feb-19	134,495	132,811	£3,130.24
Mar-17	972,943	£14,881.72				Mar-19	124,241	123,616	£2,976.54
Apr-17	173,805	£2,934.06				Apr-19	95,960	97,812	£2,425.02
May-17	75,523	£1,409.15				May-19	86400	77,825	£2,020.46
Jun-17	65,814	£1,254.08				Jun-19	40660	44,285	£1,307.43
								1,154,101	£28,753.87
						Savings attributed to new boilers =		128,233.4	£3,194.87
Total		**2,347,085**	**£38,615.56**			**Total**	1,171,271	**1,282,334**	**£31,948.74**
Monthly Avg.		**195,590**	**£3,217.96**			**Avg.**	97,606	**106,861**	**£2,662.40**
ECOPILOT REDUCTION OF...							*-50.1%*	***-45.4%***	***-£6,666.82***

1,064.751 MWh's saved against a Commitment of 435 MWh's pa

GAS

Ref. Yr		
kWh's	2,347,085	
£	£38,615.56	
£/kWh	0.0165	
EP 1st Yr		*Using Ref. year energy rates*
kWh's	1,282,334	
£	£31,948.74	*£21,097.69*
£/kWh	0.0249	*0.0165*
Cost Without EP		
kWh's	*2,112,377*	
£	*£52,628.84*	
£/kWh	*0.0249*	
Actual Saving		
£20,680.10		*£17,517.87*

(allows for 10% saving generated by new boilers)

Electricity Consumption

Reference Year (Utility Data)						Ecopilot Year		
	kWh's	£		kWh's	£		Eutility Data (kWh's)	£
			Jul-17	110,152	£11,363.13	Jul-18	100,891	£15,159.50
			Aug-17	108,491	£11,203.43	Aug-18	92,054	£11,311.96
Sep-16	109,600	£11,358.78				Sep-18	92,566	£11,339.79
Oct-16	108,222	£11,202.33				Oct-18	91,627	£11,244.48
Nov-16	103,360	£10,793.96				Nov-18	99,625	£12,045.35
Dec-16	104,709	£10,896.66				Dec-18	95,579	£11,581.64
Jan-17	109,289	£11,351.67				Jan-19	97,499	£11,812.16
Feb-17	96,819	£10,145.31				Feb-19	82,874	£10,080.88
Mar-17	108,303	£11,241.67				Mar-19	92,810	£11,262.12
Apr-17	102,376	£10,624.80				Apr-19	84,608	£10,334.60
May-17	114,278	£11,769.15				May-19	90,336	£11,008.29
Jun-17	114,364	£11,772.66				Jun-19	74,523	£9,246.71
Total		**1,289,963**	**£133,723.55**			**Total**	**1,094,992**	**£136,427.48**
Monthly Avg.		**107,497**	**£11,143.63**			**Avg.**	**91,249**	**£11,368.96**
							-15.1%	***£2,703.93***

194.971 MWh's saved against a Commitment of 97 MWh's pa

ELECTRICITY

Ref. Yr		
kWh's	1,289,963	
£	£133,723.55	
£/kWh	0.1037	
EP 1st Yr		*Using Ref. year energy rates*
kWh's	1,094,992	
£	£136,427.48	*£113,511.95*
£/kWh	0.1246	*0.1037*
Cost Without EP		
kWh's	*1,289,963*	
£	*£160,719.35*	
£/kWh	*0.1246*	
Actual Saving		
£24,291.87		*£20,211.60*

CO2 Levels before (KG)	*CO2 Levels after (KG)*	*CO2 Reduction (KG)*	
432,239.17	*236,154.71*	*196,084.46*	***GAS***
453,550.99	*384,999.19*	*68,551.80*	***ELECTRICITY***
885,790.16	*621,153.90*	*264,636.27*	

-264.64 ***Tonnes of CO2***
-29.88%

Total Savings	**£44,971.97**	**1,260 MWh's**	**264.64 Tonnes of CO2 (29.88%)**
	£37,729.47 = cost saving if energy rates had remained the same as the reference year. Other elements remain unchanged		
"Annual" Minimum Savings Commitment	**£17,212.25**	**532 MWh's**	**139.42 Tonnes of CO2 (12.06%)**